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VOL. XVIII. CLEVELAND, OHIO, JANUARY 31, 1895. NO. 5

LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and im rove the character of the service rendered to the public.

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U. S. DEPARTMENT OF AGRICULTURE.

WEATHER BUREAU,
WASHINGTON, D. C., JANUARY 19, 1895.

Wind signal displaymen at stations on the Great Lakes are authorized to telegraph for information regarding expected weather conditions in their vicinity whenever such information is requested by masters of vessels flying the American flag. From stations on Lakes Superior, Michigan, or Huron, these requests will be addressed to the Weather Bureau office, Chicago; from stations on Lakes Erie or Ontario to the Weather Bureau office, Buffalo.

Masters of this class of vessels, whenever at a port on the Great Lakes, where there is no Weather Bureau office or wind signal display station, may themselves telegraph for this information, observing the same rule as to territory as given above.

The telegram should be addressed simply: "Weather, Chicago," or "Weather, Buffalo."

These messages and the answers thereto will be at Government expense, but it is expected that the privilege herein granted will only be exercised when the information sought is regarded as necessary for the safety of the vessels concerned.

It is also expected that vessel masters who avail themselves of this privilege will make public the information thus obtained for the benefit of all vessels in their vicinity.

MARK W. HARRINGTON,
Chief of Bureau.

NICARAGUA CANAL BILL PASSED.

The Senate has passed the Nicaragua Canal bill by a vote of 31 to 21.

The bill as passed provides that the capital stock of the Maritime Canal Co. of Nicaragua shall consist of a million shares of $100 each. It authorizes the company to issue 3 per cent bonds to the amount of seventy millions, which shall be indorsed and guaranteed by the Treasury of the United States, and shall be secured by a first mortgage on all the property of the company. The interest on these bonds is to be paid by the company as it falls due; and on failure to do so is to be held to pay 4 per cent interest to the United States. And such default shall also bring with it the right of foreclosure and sale.

In consideration of the guarantee, the United States is to receive seventy millions in stock of the company; six millions of stock is to go to the government of Nicaragua; one and one-half millions to the government of Costa Rica, and the remaining twenty-two and one-half millions is to go to extinguish former issues o f stock and to the construction of the canal. Ten of the fifteen directors of the company are to be appointed by the President of the United States with the advice and consent of the Senate.

LIGHT-HOUSES AND ILLUMINANTS.

For years experiments have been made in the interest of light-houses. First wood and coal were burned in iron or stone receptacles. Then lamps or torches and sperm oil came into use. When sperm oil became too expensive that of the colza, or wild cabbage seed was tried. The plant was even introduced to America, but its oil did not hold power for any extended period. Lard oil held prestige for a continued period, but gradually gave way to the mineral product. Kerosene oil is that which has been adopted by the light-house board as the luminant, though gas and to a limited extent electricity, have been given a trial. Gas is being used only at Alexandria, Va., and Newburyport, Mass. Cleveland was the last place to give it up. Kerosene oil is considered the best and the cheapest. It is ever reliable. Electricity will no doubt be adopted when congress can be prevailed upon to appropriate money for experiments. It has been tried in one or two places on this side of the Atlantic with indifferent success. European countries have tested electricity with gratifying results.

The light-houses of the world number more than 7,000. The United States has over 1,300 houses and as many posts. The latter are simpler in construction and not very expensive since they are maintained on shore. Our government has been proceeding with the theory that the coast should be so sprinkled with lights that the rays meet and pass; that a vessel will meet the one in advance before the one in the rear is out of sight. With this in mind it will be seen that the annual appropriation for their keeping is no insignificant sum. One hundred years ago when the government assumed charge of the system the expense was about $22,000 a year. It is now nearly $4,000,000.

The erection of some of our light-houses has been a difficult undertaking, often attended with loss of life. When the British completed the station at Eddystone they demonstrated that it is possible to put up a light almost any place and that perils can be overcome. The people of Oregon must have had the Eddystone in mind when they set out to erect a station on Tillamook Rock, near the mouth of the Columbia. The rugged character of the headland, the tendency of landslides, and the great distance from a supply station all tended to make the undertaking one of expense and great perils. The drowning of the foreman the first day work was commenced discouraged the men and prejudiced the local public against the enterprise. Though workmen were hard to get, operations were commenced in '79, and four masons were landed upon the danger-rock. All that they could take in the little boat was provisions, a stove, some canvas to protect the fuel and supplies from the weather, and a few necessary tools. A few days later five more men and a derrick were landed. For the next nine days the workmen had no shelter from the rain and mist except that of the canvas.

By slow degrees they worked into the hard rock. A rude shanty was put up for quarters and the entire winter was spent on this narrow reef. One day a gale carried away the supply house and endangered the quarters and for the next two weeks it was impossible for the steam tender, which supplied their wants, to give them assistance. After untold hardships the work was finally completed and a tower 48 feet high stands as a monument to their daring labor. Had the light-house been completed one month sooner it would have saved the English bark Lupata, which foundered on the reef. The bark came so near the rock on which the workmen were quartered that the orders of the captain and the creaking of the blocks could be distinctly heard. The night was too dark and the gale too fierce for the little band of laborers to render any assistance. At the same time they were in great distress and danger, for part of their shanty was washed away.

One of the most unique towers in existence to-day is the rear beacon, Paris Island range, sea coast of South Carolina. It is also the most economical structure of the kind known. The plan was from necessity and not from choice. A light was needed but congress did not appropriate enough money for a structure suitable to the place. The sum that was given went a long ways. Iron rods were run up forming a pyramid, much the the same style of a natural derrick. In the apex was hung a pulley. With this and a rope the light, powerful locomotive headlight with reflector, was hoisted and lowered daily. The entire plant did not cost over $12,000.

Foreign countries maintain their light-houses by charging dues against the vessels using the light. We have no such system of dues. This allows the foreigners to discriminate against us. American merchants have protested and have asked for retaliation. Our government takes care of its light-houses as it does its army and its navy.

NEWS AROUND THE LAKES.

CLEVELAND, O.

Special Correspondence to The Marine Record.

The Chamber of Commerce is now considering the advisability of organizing a maritime board or exchange within its ranks.

The Globe Iron Works Co. have ciosed a contract with Manager W. D. Rees to place a strengthening belt of three-quarter inch plate around the steamers LaSalle and Joliet.

The annual meeting of the Cleveland & Buffalo Transit Co. will be held at Rockport on Tuesday next, when some action relative to building a new boat, either twin screw or side wheeler is likely to be taken. Freight handling facilities and other dock improvements will be commenced at an early date.

Col. Jared A. Smith, Corps of Engineers U. S. Army, in charge of the keep up and improvement of harbors in this district advertises for bids for the construction of a pier at Conneaut, O., and for the repair of pier at Monroe Harbor, Mich., also for the extension and improvement of harbors at Black River, O., bids to be in by Feb. 12. The same officer in his capacity of lighthouse engineer asks for bids on the removal of old beacons and the construction of new ones at Grosse Isle, Detroit River. The engineer states relative to Cleveland work, that the cut in the west breakwater would probably not be made until early spring, so as to be almost ready for use by the opening ot navigation. He has not yet drawn up his report as to the expenditure of the remainder of the $50,000 appropriated for Cleveland harbor improvements this year, and will hold this back until something is heard from the memorial sent to Washington concerning the removal of the west pier further to the westward, thus widening the entrance an improvement which is of great importance to the port.

CHICAGO, ILL.

Special Correspondence to The Marine Record.

Charles Larsen the well-known yacht and boat builder is now foreman at the Marine Iron Works' boat building yard.

J. K. Keith & Co. chartered the steamer John Oades and bargo H. A. Hawgood for corn at 2¼ cents both for winter storage and delivery at Buffalo in the spring.

At Miller Brothers' shipyard, the steamer Servia, which had occupied their largest dry dock just seven weeks receiving extensive repairs went out of dock last Thursday. The steamer C. F. Bielman took her place for repairs.

Palmer, Cook & Calbick chartered the steamer C. B. Lockwood for 96,000 bushels of corn at 2¼ cents and the steamer Rube Richards for 40,000 bushels of wheat at 2½ cents, both for winter storage and delivery at Buffalo in the spring.

Up to this time no news has been received here of the hull or crew of the steamer Chicora and grave fears are entertained that all hands are lost. Capt. Ed. Stines and several members of his crew were well known here and much sympathy is felt for their families.

Capt. Robt. Young, president of the Chicago Lodge of the Shipmasters Association returned to this city Monday from Washington, where he attended with other delegates of the association, on Supervising Inspector-General Dumont in regard to fog signals on the Great Lakes.

The Independent Tug Line tug William Dickinson left here Tuesday morning for Benton Harbor, under orders from J. H. Graham, president of the Graham & Morton Transportation Co. to release the steamer Petosky stuck fast in the ice off that port, and proceed with her along the east shore of Lake Michigan in search of the steamer Chicora and her crew. Capt. Thos. Barry, mate, James Delaney, engineer, Frank Barney, fireman, Sid Parson and linesmen James McCormick and Jack McAvery comprised the officers and crew of the Dickenson in addition to which several newspaper reporters were on board.

The principle reason given by the towing companies for not despatching boats from here earlier to search for the Chicora, is that they dared not risk their boats on the lake until the weather became more settled. The object seen floating in the lake some distance off St. Joseph Monday afternoon and which was thought to be a tug proved on closer examination to be a large hummock of ice drifting along the outer edge of the frozen field. Graham & Morton are preparing already to secure a new boat to take the place of the Chicora. They say that in all probability they will not build this year, but charter a lake steamer fully the equal of the Chicora. Several tenders of propellers, for charter or purchase, have been made them, but no final decision has been reached as to which one they will take. It is said that a strong effort will be made to secure the side-wheel steamer City of Milwaukee, and in case of failure the City of Toledo will be chartered.

The Marine Iron Works will furnish a Roberts Safety Water Tube Marine Boiler to carry 200 lbs. steam pressure to the Illinois State Fish Commission to be used on the stern wheel dispatch steamer Lotus on the Illinois River at Havanna, Ill. It is to replace a shell boiler which is being taken out of the Lotus. They are just shipping an engine 14x14 and Scotch type boiler 6 ft. 6 in. by 8 ft. 9 in. and complete outfit for a tug 80 feet long building for Joas Pedro de Andrade at Manaos, Brazil. They are completing a 67 foot steam yacht and building a steam launch 36 feet over all 7¾ feet beam, 3 feet draft. She will have short fore and aft pieces of deck and cock pit and be furnished with machinery to make her a very fast boat. They are also building a Roberts Safety Water Tube Marine Boiler size 9 ft. 4 in. by 5 to carry 200 lbs. steam pressure. Manager Nourse is hard at work finishing up a catalogue which he expects to have out about February 15th next. He has received many inquiries in reply to circular of "Steam Yachts For Sale" of the steam yachts which were used at the World's Fair.

DETROIT, MICH.

Special Correspondence to The Marine Record.

Frank E. Kirby and Mr. Gilbert McMillan of the Detroit Dry Dock Co. are expected home from their European tour this week.

John Galwey, marine engineer, has been appointed by the senate as supervising inspector of steamboats for this district to succeed Capt. Westcott. Mr. Galwey is now attending the annual meeting of the board at Washington. The opposition of a large number of vessel owners to Galwey's candidacy did not seem to have the desired effect on the senators as the vote for his appointment was given by a respectable majority.

The Flint & Pere Marquette line of steamers are keeping open winter communication between Milwaukee and Ludington. So, also, are the Grand Haven and Milwaukee line steamers Osceola and Wisconsin chewing up all the ice that comes in their way. The car-ferries crossing Detroit River have had all they could do this week to keep open water and on Monday three of them were thumping hard at it in mid-river for some hours trying to reach across.

A movement has been started to raise a fund for the relief of the families of the crew of the Chicora. Should it take a definite form the Graham & Morton Co. will be liberal contributors, and will disburse any contributions sent them to the needy ones and account for them. Most of the men left families in humble circumstances and who are now in need. Capt. Stines carried a life insurance policy in the Shipmaster's Association, but had accidentally let an assessment or two pass without payment. There are widows and orphans in need, and the proposed is for their benefit.

A handsome $70,000 steel steam yacht for Commodore Mills is contrated for at the yards of the Detroit Boat Works for delivery July 15. The length of the yacht over all is to be 132 feet, water line length 110 feet, beam 17 feet, 6 inches, and molded depth 8 feet 9 inches. She will be schooner rigged with clipper bow, flush deck, metal bulwarks about 12 inches above the deck, and a netted hand rail above the same. The hull will be constructed of the best quality of milled open hearth steel. She is to have three water-tight bulkheads, one in the bow and one at each end of the machinery. The decks are to be of clear white pine fastened to the steel deck frames by brass screws. The propelling power will be a triple expansion engine, 10, 16 and 26-inch cylinders by 6-inch stroke. There will be a surface condenser of the salt water type with air and circulating pumps, boiler feed pumps, blower engines and an electric light plant. The boilers will be of Taylor's improved water tube type, 8 feet in diameter and 9 in length, with a heating surface of of 1,600 square feet. It is intended that she will develop 350 horse power. There will be a special device for discharging ashes by the means of a steam blower, so that there will be no dust. The coal bunkers will have a capacity of twenty tons of hard coal and an arrangement will be made whereby the oil tanks in the machinery rooms can be filled through deck pipes which close up tight.

BUFFALO, N. Y.

Special Correspondence to The Marine Record.

Harbor-master Dozle will be succeeded by Capt. Robt. C. Soper on March 1.

The report that general-manager John Gordon will sever his connection with the Northern Steamship Co. is flatly contradicted. There has been several changes made but Mr. Gordon is not in the list by any means. A new general passenger agent will be selected in a few days and Mr. Stewart Murray, the general freight agent retains her position.

There seems no doubt but that the steamers owned by the Western Transit Co. are in the market for sale and it has even been mentioned that $100,000 would purchase the Empire State, Idaho and Badger State. The advent of the two Northern Line steamers next season will shake up the Lake Superior passenger traffic and nothing but the latest and best will hold the balance of patronage. As far as the Anchor Line is concerned the India, Japan and China are undergoing a thorough overhauling and people who have traveled safely on this Line for years will not be likely to desert these favorite, steady going boats.

PORT HURON, MICH.

Special Correspondence to The Marine Record.

The steam barges Mills and Belle Cross are receiving repairs at this port.

St. Clair River is covered with ice up to a point opposite the Indian reserve below Sarnia.

Capt. John Miller left Saturday night for Wallaceburg, Ont., with his pacer to attend the speeders' meeting.

James H. White: "I am in favor of a bridge at Thirteenth street. There is more travel at Thirteenth street than at Tenth street."

Capt. S. H. Burnham has practically completed the work of overhauling, refitting and repainting the steamer Mary, and she will be ready for business as soon as the ice moves.

Capt. George Tebo, of Chicago, is calling on his many friends in Port Huron. The genial captain does not look a day older than he did five years ago, when he left Port Huron.

The Marine Engineers' ball at the Armory Wednesday evening, was a pleasant affair. The hall was handsomely decorated and the supper was elegant. There was a large attendance.

The Union Storage Co. are completing the work of fitting their docks for the handling of coal to supply their line of boats. They will handle about 500 tons per month during the season.

Capt. Si Sinclair and Capt. Geo Tebo, both formerly of Port Huron but now of Chicago, attended the M. E. B. A. annual ball. Capt. Tebo makes it a point to attend this ball regularly every year, even though he lives nearly 350 miles away.

Alex Anderson is this week completing the work of laying the keel for a new steambarge at his shipyard. The steamer is being built for Jesse H. Farwell and will be ready for business early in the summer. The machinery of the Geo. L. Colwell will be used in her construction.

Engineer Avery, of the water works, has been compelled to keep a man at work at the water works dock clearing away the ice from the inlet to the pumps. Several of the men who do the work were formerly railroad men, who are glad of the work, although it is not of the lightest kind.

Capt. John Cadotte, of Algonac, a well-known vessel man, died on the 23d, about 50 years of age. The captain sailed the lakes for many years, but about 10 years ago received an injury which made it necessary for him to remain ashore and he took up business in Algonac, where he has for years carried on a coal dock. He has for some time been obliged to have a pipe from his lungs to carry off an accumulation of pus, though he has been a portion of the time in good health. He was unmarried, having made his home with his mother.

It is said that a canal from Lake Erie to the coast

will be built by private capital. A charter has been secured from the Canadian government incorporating the projectors of the scheme as the North American Canal Co. The proposed route to the sea does away with 25 miles of the Welland Canal, using it only to Lake Ontario, thence by the St. Lawrence River, a canal forty miles long from Lake Francis in the St. Lawrence, to Lake Champlain, a canal twenty-five miles long to the Hudson River, and thence to the sea, making a total length of ninety-one and one-half miles. The distance from Lake Erie to New York is 720 miles, or 803 miles from Cleveland. In the entire distance there are to be but five locks.

OBITUARY.

CAPT. JOSEPH KENDRICK.

Capt. Joseph Kendrick, one of the pioneer navigators, and widely known throughout the lakes, was laid to rest at Riverside Cemetery last Sunday, the Rev. W. H. Jones, of St. John's Episcopal Church, officiating.

Capt. Kendrick was one of the oldest and most experienced men in lake navigation, having reached the age of three score years and ten when he was summoned hence under sealed orders. He was a native of New York and at the age of sixteen years embraced sailing as a profession. He served in the United States navy throughout the Mexican war and received honorable mention for his skill and daring during the commission.

Forty years ago Capt. Kendrick reached Cleveland and shipped in a schooner manned by her owner and his sons, bound to Buffalo. On the return trip the stranger or salty as he would then be called, joined the ends of a three and four stranded rope together and the neatness of the work so took the master and owner's attention that he was promoted forthwith to second mate and he then swiftly worked his way along to master. A season or two after this, or in about 1856, we find him chief mate of the propeller Spalding, making a change to superintend the construction and to take charge of the schooner Cuyahoga, a vessel which subsequently entered the Atlantic trade, from the Cuyahoga, he went into the Eliza Logan, Invincible, D. P. Dobbins, J. G. Masten, Pelican, Geo. Sherman, D. K. Clint, L. C. Butts, and rounded up his long career in the Menominee line steamer D. W. Rust, his favorite command in all of this time being the J. G. Masten, now sailed by Capt. Parker, who was before the mast with Capt. Kendrick. About two years ago the captain resigned his command, owing to an internal ailment which ultimately was the immediate cause of his death, although having great will power he conquered for months what would have carried off a less resolute spirit.

It was always a source of gratification to Capt. Kendrick to remember that throughout his eventful career he had gone clear of all accidents involving the loss of life and property, and from his skill in seamanship as well as his own integrity of character Capt. Kendrick had surrounded himself with a large number of warm friends, shipmates and associates on shore who deplore his loss.

There are but few men sailing on the lakes having so lengthy, successful and honorable a record to their credit as the late Capt. Kendrick and there are none who made and retained so many friends as the aged seaman who has just passed away. He was an excellent husband and father, a man of unblemished reputation in his business career and possessed a will power which formed an integrity of character which all with whom he was brought into contact could not but admire. Capt. Kendrick was also a member of Bigelow Lodge, F. & A. M. His last watch on deck was kept with his wife, three sons and three daughters, all of whom are married and reside in Cleveland, with the exception of one daughter who lives in Marysville, O.

THE Penberthy Injector Co., Detroit, manufacturers of improved automatic injectors and other steam specialties, have just issued a new catalogue and price list containing cuts and descriptions of a number of new water gages and oil cups which are now being placed upon the market by the firm. The Penberthy has earned a wide reputation among marine engineers and those using or intending to use the improved automatic injector or other of the firm's specialties should secure a copy of the new catalogue giving complete directions for their use. Any engineer writing the Penberthy Injector Co., Detroit, and mentioning THE RECORD will be sent this trade literature.

THE EXPERIMENT PROVED EXPENSIVE.

In a letter to general manager Champion, of the Green Bay and Kewaunee railway, announcing the withdrawal of the car ferry steamers from the Menominee route, general manager H. W. Ashley, of the Toledo, Ann Arbor & Northern Michigan railway, says the cost for coal alone on the last trip from Menominee to open water via. the Sturgeon Bay canal was $365, or $150 per day. The trip occupied two and one-half days, during which time the steamer's engines were worked day and night without interruption. The freight for the twenty-two cars carried amounted to $220, or $155 less than the cost of the fuel.

MERITED DISTINCTION.

Robert Laidlaw, president of the Laidlaw-Dunn-Gordon Pump Co.,of Cincinnati,was elected treasurer of the National Association of Manufacturers,which convened at Cincinnati the third week in January. Mr. Laidlaw was one of the leading spirits in organizing the association, and much of the success of the convention was due to his superior skill and untiring energy. The delegation was banqueted at the new plant of the Laidlaw-Dunn-Gordon Pump Co.

REPORTED BY THE LOOKOUT.

Capt. Nels Craite of the Kewaunee, Wis., life-saving station has been at work for several days erecting a platform on the roof of the station building which will be used as a prominade and lookout for the men on watch while the station is open during the season of navigation.

The mortgage foreclosure of the steamer Pringle and consorts Harrison and Sweetheart was held at Tonawanda Saturday. The mortgage against the tow was $140,000, and that amount was bid by Granger Hollister. The sale included the steamer Emily P. Weed. The latter is valued at $200,000, while the Pringle tow is worth about $60,000.

The answer of the defendant in the case of the Empire Transportation Co. against the Philadelphia & Reading Coal & Iron Co., at Duluth in which the plaintiff sued for demurrage at the rate of $200 per day for a delay of twelve days last summer in unloading a cargo ot soft coal has been filed in the United States court as Duluth. The coal company alleges that the strike which caused the delay was due indirectly to the American Railway union difficulty, claims that due diligence was used in the attempt to secure men to take the places of the strikers, and denies that the demurrage it worth $200 per day.

CHICAGO CANAL AND THE LEVEL OF THE LAKES.

There is a strong feeling extant that the effect of opening the Chicago drainage canal will be to lower the level of the lakes. This ground was gone over several years ago in THE RECORD, and the probable evil of an almost unlimited flow, making a miniature second Niagara, was canvassed in all of its bearings but the "I will" of Chicago carried the day and the work of several thousand men assisted by a mechanical plant of a larger capacity than has ever been engaged in any engineering feat in the world has nearly accomplished the cutting which is to furnish Chicago the greatest open sewer ever conceived by man and incidentally a commercial waterway for small, special tonnage during a few months of the year. From a Chicago real estate, as well as from a sanitary standpoint, the drainage project through an open sewer capable of floating vessels from Lake Michigan through to the Upper Mississippi is a most commendable one and the ability, aptitude and energy of the citizens of Illinois, who have carried out the scheme to a successful issue is worthy of the greatest praise, nor ought Chicago to be deprived of this absolutely indispensable method of sanitation. It is at this point, however, where other and larger interests may be affected, for, what is an excellent thing for Chicago and tributary interests may not be advantageous, in fact, may be very derogatory to the commerce of all lower lake ports through a lowering of surface levels on account of the inflow required to supply the Chicago Canal with live water.

Professor G. Frederick Wright, of Oberlin College, Ohio, who has made a careful study of the geology, geography and hydrography of the lakes is of the opinion that very shortly after the opening of the Chicago Canal a lower level will be found to obtain at lake ports, and if so, the changed conditions would not only involve an outlay of millions of money in dredging, altering docks and wharves, etc., but it would also seriously affect the carrying trade, commerce and transportation of the lakes. In a lecture delivered this week in Cleveland, Prof. Wright stated in part as follows:

"The delicacy of the balance of forces which maintains the present outlet of the lakes at Niagara is one of the most remarkable of all geographical facts. Only eight feet of gravel now prevents the water from Lake Michigan from flowing over into the Illinois River. An elevation of the land at Buffalo of fifty feet would reverse the drainage and cause the whole volume of water to flow over the Chicago pass into the Mississippi Valley, or a subsidence of that amount at Chicago would produce the same effect. Another low pass exists at North Bay, on Lake Nipissing, in Canada, where a subsidence of a hundred feet would draw the water of the lakes off through the Mattawa River into the Ottawa, and so into the St. Lawrence at Montreal.

"A Chicago project is now well under way to turn a considerable portion of the drainage of the Great Lakes again through the old channel by way of the Illinois River into the Mississippi. Chicago, like all great cities, has encountered the difficult problem of the disposal of its sewage, which at the present time occasionally contaminates the city water drawn from Lake Michigan. For some time they have pumped a part of this sewage into the Desplaines River, where it has found its way into the Illinois. They are now digging a canal through which the water of Lake Michigan will flow in a great volume to carry off the drainage beyond their reach into the Mississippi Valley, but the inhabitants of the state have taken the alarm and through the legislature have compelled Chicago to build a canal large enough to admit sufficient water so to dilute the sewage that it shall not contaminate the whole Illinois Valley. To accomplish this purpose they have specified that at the outset the canal shall be 160 feet wide at the bottom and 18 feet deep, conveying a current of water at the rate of three.miles an hour. This will carry away 10,000 cubic feet of water per second, which is about 5 per cent. of the whole amount passing over Niagara Falls. When the population amounts to 2,000,000, Chicago is to double the capacity of its canal, and to increase the flow thereafter in proportion to the growth of the city.

"There is room for much speculation as to the effect which this drainage will have upon the level of the lakes, and upon the waterways and harbors about which such great interests are growing in the lower lakes. The Chicago engineers have naturally belittled the effect, maintaining that at the utmost it would lower the level of the lakes only about three inches, and that it would have little deleterious effect during the navigable season. On the contrary, Major Ruffner, of the corps of engineers of the United States Army, has recently shown that the proposed Chicago Canal will lower the lake level about nine inches at the outset, and of course, much more after it is enlarged to meet the wants of the increasing population. It would seem, therefore, that the project involves the interests of all the ship owners and of all the cities along the lakes, as it will affect the depth of the water in the channels and harbors to which our commerce is now adjusted.

"It is not, however, an easy matter to calculate just what the effect will be. In the early spring and summer the melting snows and the frequent rains will keep the level of the lakes so much above the average that no inconvenience will then be felt. But at the time of ordinary low water in the autumn months the effect must be augmented to the extent to which the general level has been lowered by the canal. It would seem, therefore, important that the other interests along the lakes should take timely measures to protect themselves.

"Of course, we should not be so inhuman as to attempt our own protection by sacrificing the lives and health of the citizens of Chicago, but should only insist upon their taking such precautions as are attainable to prevent this interference with the vested interests which have grown up upon the lower lakes. The most feasible plan would seem to be to build a low dam above the 'Soo,' so as to raise the level of Lake Superior one foot, which, according to calculations of good engineers, would pond up enough water in the spring and summer to maintain the general level below if gradually let down in the autumn months. Whether such a dam would be prejudicial to the interests of Duluth and other cities on Lake Superior, I am not able to say. But that it would be sufficient for this purpose is easily proved. A very low dam across the outlet to a large reservoir holds back an immense amount of water, and the slowness with which a great river lowers the level of Great Lakes is surprising. It is estimated that if no more water should run into the Great Lakes, it would require a hundred years for the Niagara River and its present rate of flow to empty these great basins, and it would require three months for the Chicago Canal to lower the level of Lake Superior six inches.

"We have not time to speak of the many other complications likely to arise from the Chicago Canal, the most significant of which will be a rise in the Mississippi Valley. It is estimated that it will raise the low level of the Illinois River seven feet, and the level of the Mississippi River at St. Louis one foot, and at Cairo six inches. Altogether, the Chicago Canal will be one of the most interesting and gigantic experiments which have ever been made in diverting the course of nature's great waterways."

CORRESPONDENCE.

☞We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

IN WINTER MOORINGS.

CHICAGO, ILL., January 29, 1895.

To the Editor of The Marine Record:

How many of the Northern Transportation Co. boats are laid up in winter quarters at this port, what are their names and the masters' with their addresses? You will oblige me very much by answering the foregoing in the next issue of THE RECORD. SUBSCRIBER.

There are none of the Northern Steamship Co.'s boats wintering in Chicago. A letter of pertinent inquiry addressed to the general manager of the line, Mr. John Gordon, Buffalo, will certainly receive prompt and courteous attention.—ED.

THE NEW 'RULES OF THE ROAD."

BUFFALO, January 29, 1895.

To the Editor of The Marine Record:

Taking the rules as published in the last issue of THE RECORD, I find that H. D. Goulder, Esq., has "out Heroded Herod himself," and given the lake marine all they wanted and a great deal more besides. Of course Mr. Goulder in his admiralty practice in the courts must have long ago felt disgusted with the language and rules of the road as framed by the Board of Supervising Inspectors of SteamVessels and he must have just longed for some means whereby he could get a crack at them, and if the code which he has introduced is enacted by the present congress he will have worked the slickest kind of a measure that I have seen for many a day.

The purpose of the several delegations of owners and masters that went to Washington, as far as I could learn, was to have the passing signals in fog allowed on the lakes, and this too, with vessels going at their ordinary speed. This has been partly accomplished, as I find that in Art. 23 passing signals are to be allowed in all weathers. But how? Under bare steerageway if a whistle or fog signal is heard four points on either bow and always in fog, mist, falling snow, heavy rain storms or other causes with the steamers slowed down to a moderate speed, this is all the safeguards required and minimizes the passing signal question in thick weather so as almost to annul the use of any signal at all, especially if we take into consideration rule 18, which makes the steamer having another on her own starboard side the giving way vessel, whether whistles are sounded or not, in fact there would be no use of signaling when the duties of each are so clearly defined in all weathers and the steamer which has the other on her own starboard side keeps clear any way she likes, while the other proceeds steadily on her course according to rule 20. So also with rule 17 whether signals are given or not, it is the duty of all steamers meeting end, or nearly end on, to port.

On the whole I find the new rules embody the formulation of the oldest rules known and according to international practice, with the exception of a modoc whistle for raft towing, and the right of way given to a descending steamer in narrow channels and rivers where there is a current and the embargo placed upon steamers not being allowed to overtake and pass any vessel in all channels of less than five hundred feet in width, so that in substance with a few minor details the new rules which it is hoped to put in operation from Duluth to Montreal are old rules in the navigation of vessels, and yet, attention must not be centered on the right to give passing signals according to rule 23, although in all cases, except in meeting end on, both vessels signal, but one only may act in accordance therewith.

To sum up, in thick weather vessels must proceed at a moderate speed. Hearing a whistle or fog signal over an arc of ninety degrees, or eight points round ahead they must slow down to bare steerageway. How about the ninety-first degree? A steamer having or hearing anything to starboard must give way, while the other proceeds on her course and maintains her moderate speed, or both go under bare steerageway until the signals are heard less than forty-five degrees forward of the beam. How about the forty-sixth degree? With the onus of clearing collision resting with the steamer that has the other or others on her own starboard side. Furthermore, a descending steamer in a current may elect to take any side of the fairway she pleases, and no steamer is to pass another going in the same direction unless the vessel ahead is agreeable, but they may pass going in opposite directions by both slowing down.

The foregoing are the salient and pertinent changes in the new code for the lakes, which all hands are eager to see passed by congress ready for next season's work, and, if they are adopted, it is a foregone conclusion that everyone must be satisfied, but I for one fail to see where the passing signal in fog seems to come in any more than in clear weather, as on parallel courses everything must go clear, on directly opposite courses both must port, while the vessel having anything to starboard must give way, all of which is a very clear, safe and concise code to go by if there is not a string of barges to keep on end before a gale of wind, when it would seem that steerageway meant pretty lively pelting to keep from being overrun by the tow.

HARD-A-PORT.

SAILING ON DIFFERENT COURSES.

PORT SANILAC, MICH., January 28, 1895.

To the Editor of The Marine Record:

Two steamers start from a given point, one steers due north 100 miles and the other N. by E. 100 miles. How far would they be apart? How far would they be apart after one run N. 100 miles and the other N. E. the same distance? State rule for working same.

W. I. RAYMOND.

To make the foregoing as clear as possible we have projected the courses from several parallels of latitude, giving latitude and longitude, as well as course and distances. Starting in the first case from the equator in longitude 30° W. as follows:

Course N. 100′, position lat. 1° 40′ N. long. 30°00′ W
Course N. by E. 100′, " lat. 1° 38′ N. long. 29°41′ W

Course and distance from 1st to 2d position, S. 84° E. 19 miles; between 1st and 3d S. 68° E. 77 miles.

Taking a position in lat 44° N. long. 83° W., near the locality our correspondent writes from, we find as follows:

Course N. 100′, position lat. 45° 40′ N. long. 83° W.
Course N. by E. 100′, " lat. 46° 38′ N. long. 82°32′W
Course N. E. 100′, " lat. 45° 11′ N. long. 81°20′W

Course and distance between 1st and 2d position S. 84° E. or a 7½ point course, distance 19 miles; course and distance between 1st and 3d position S. 68° E. a 6 point course, distance 77 miles.

Again taking a departure in lat. 60° N., long. 50° W. the result is as follows:

Course N. 100′, position lat. 61° 40′ N. long. 50° W
Course N. by E. 100′, " lat. 61° 38′ N. long. 49° 20′W
Course N. E. 100′, " lat. 61° 11′ N. long. 47° 34′W

Course and distance between 1st and 2d position S. 84° E., distance 19 miles; between 1st and 3d position S. 68° E., distance 77 miles.

It should be noticed that the difference of longitude on a N. E. or a four point course at the equator is only 71 miles, while in lat 60° N. the difference of longitude for the same course and distance traversed is 146 miles. A nautical mile or knot contains 6,075 feet, a statute mile 5,280 feet. A mean sexaguesimal degree of the terrestrial meridian is 69,046 statute miles. On the equator there are 60′ in a degree of longitude, corresponding to 69.07 statute miles. In latitude 48° there are but 40 geographical miles in a degree of longitude. In latitude 60° there are but 30′ in a degree of longitude and 34.50 statute miles. Latitude 70°, 20.5 miles in a degree of longitude and 23.60 statute miles. In latitude 80° 10.4 geographical miles to the degree of longitude and 11.98 statute miles.

As regards the rule for working these initial questions in navigation we would say, project the courses on a chart or consult any text book on the methods of solving the different sailings, briefly, plane sailing, where the curvature of the earth is neglected, as in current and traverse sailings, the problems may be solved by plane trigonometry using the tables of logarithms of numbers and logarithmic functions of angles, or solved by direct inspection of the traverse tables. Spherical sailing embodying Parallel, Middle Latitude, Mercator's and Great Circle sailings differs from the Rhumb or Plane sailing because the surface of the earth must be regarded as spherical and, therefore, new elements arise. In a word, Rhumb or Plane sailing supposes the distance traversed to be over the extended plane, while in Great Circle or Spherical sailing the difference of longitude enters into consideration and the course traversed must be regared as spherical.

NEW YORK CANALS.

The annual report of the New York state engineer for the fiscal year ended September 30th last, has been presented to the legislature. The state engineer performs all the engineering work in connection with the state canals, which comprise 640 miles of navigable canals and 84 miles of unnavigable feeders. The report says:

"New York City, with our canal system, possesses many natural advantages over any other port, but if that advantage is to be maintained we must make the canals, which are one of its greatest feeders, adequate to handle the commerce which seeks them, cheaper, quicker and consequently better than any competing route either by rail or water.

"I understand the sentiment of the people at large, as well as the commercial bodies most deeply interested and who have made the most careful study of the problem, to be only for the greatest improvement of which the present canals (especially the Erie) are capable, without radically changing their route, structure and water supply.

"On those lines I now present my recommendations for canal improvement.

"These I believe would comprise the following:

"The deepening of the Erie and Oswego canals to nine feet, and of the Champlain to seven feet, wherever possible without radical changes in existing structures.

"The lengthening of all single locks on the Oswego Canal and those on the Erie Canal (which cannot be combined and replaced by high lifting locks) which have not already been lengthened.

"Wherever a number of locks are combined in series or are separated by short distances they should be combined into one quick acting, high lifting lock, except at points where such changes are impracticable by reason of peculiar location and surroundings. This would save much water in lockages, as well as time and expense in both operating and maintenance.

"Greater speed and economy in towing must be obtained by electricity.

"The capacity of present boats should be increased by making space now used for horses or steam engines available for cargo.

"The cost to the state of canal maintenance and operation can and should be reduced by the introduction of more modern methods and appliances.

"With the improvements suggested the tonnage capacity of the ordinary boat can be increased from 240 to 350 tons, and we could expect to see the present freight rate reduced from 3½ cents to 2 cents a bushel, which would still leave the boatman an increased margin of profit on the season's business amounting to $100.

"The many wonderful achievements of recent years in the development of electricity as a motive power inspire the hope that it may soon be made applicable to the propulsion of canal boats at a cost that would render its use practicable and profitable to all concerned. The excessive weight and expense of the best storage battery which science has as yet devised, and which would be sufficiently powerful to meet the needs of this service, seem to exclude such an appliance from serious consideration at this time. Motors placed on the boats and made to operate the common form of screw propellers will not accomplish any appreciable saving of either weight or space over a steam engine and boiler, and in many respects would be decidedly inferior thereto.

"Such a method would require two trolley wires for boats bound in opposite directions, and the boats would be helpless when not nearly under these wires. Moreover the cost of installing such a device in the boats would be practically prohibitive to the majority of the boatman, the cost being nearly that of steam, while lacking its many advantages above mentioned.

"A trolley motor, running on its own tracks, attached to tow lines as now used, controlled by a line extended back to the helmsman, and requiring no space on the boats, seems to promise several advantages over the present method, at least with the great majority of boats, among which is the possibility of renting such power when it was needed, thus requiring no outlay for installation. Such trolley lines could be built on either side of the canal, or preferably, as a double track (two rails) on the outside of the towpath and high enough above it so that animals could pass underneath the lines running to those motors, when towing by present methods. Such a device would require little change in present methods, as the motors could be considered as 'electric horses.'"

THE Bulletin of the American Iron & Steel Association reports the pig iron production of this country in 1884 at 6,657,388 tons, against 7,124,502 tons in 1893, and 9,157,000 tons in 1892. The unmarketed tonnage, December 31, was 661,328 tons, against 575,866 tons on June 30, 1894. Furnaces in blast were 185 December 31, against 108 on June 30, 1894, and 137 on December 31, 1893. June 30, 1893, the number was 226. The number of furnaces does not indicate accurately the productive capacity of the same. The *Iron Age* declares iron and steel, except girder rails, lower in December, 1894, than for seven years.

AUTOMATIC RELEASING HOOK.

(ILLUSTRATED.)

So important is an automatic releasing hook considered in ship's use that a premium or reward after competive tests of all patents was offered in England a few months ago for the truest appliance and one that would act while a vessel had way on her.

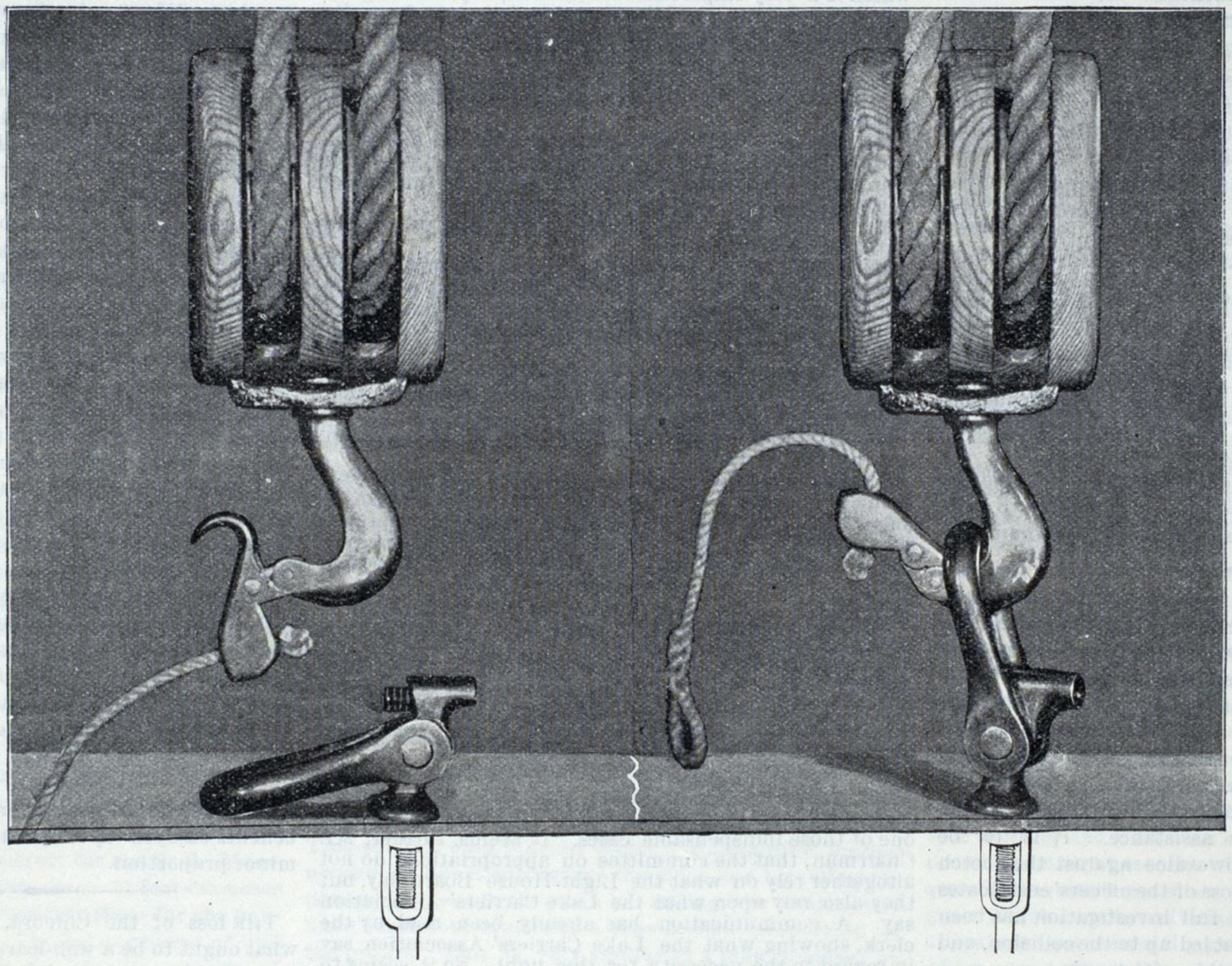
Following closely on the same lines of invention, we now learn that a New York firm has placed on the market an automatic hook, which, from its positive workings, under all circumstances is pronounced by naval experts superior to any others.

The principal use for this automatic releasing hook is, of course, for boat davit blocks and for the purpose of handling ships' boats, yawls, etc. The hook has been given the highest praise possible, Capt. Geo. E. Merritt of the steamer Parks Foster, Chicago, going so far as to state that it ought to be in universal use. Besides being the best hook for boat davit falls it dispenses with one man's labor and is a considerable gainer of time in handling cargo aboard ship or freight at depots as the moment the weight is landed the hook becomes detached thus saving the work of overhauling a heavy purchase.

Our illustration shows two views of the hook and shackle, detached and connected. Another cut shown in the company's literature is instructive as showing the method of reeving off the davit falls on the bight with the tricing line for picking the block up clear of the water after the boat has been lowered away or taking up the slack of the falls after the boat has been hooked on previous to hoisting.

The Standard Automatic Releasing Hook Co., 22 & 24 State street, New York. Capt. James R. Raymond, manager, are the manufacturers of this excellent hook construction and it is the aim of the company to place before the maritime world an automatic releasing hook so simple of construction as to be easily understood, thus overcoming the liability of accidents that are so common with other devices, chief among which is the difficulty to hook them on to the ring bolts in the end of a boat in rough weather without danger of smashing the hands or losing the boat and the liability of failure to detach both ends of the boat simultaneously.

The excellent testimonials which the manufacturers are in possession of from the best authorities in the United States coupled with the explanatory literature and engravings of the appliance forwarded to those interested by the firm is ample guarantee of the service which can be expected from the new device which fills the field it is designed for, in a manner never before obtainable, although many patent automatic hooks have been placed on the market. The principals of the Standard Automatic Releasing Hook Co., are men of practical experience in the sailing and handling of vessel property naval and mercantile and it is not too much to say that this valuable invention with which their names are identified, will be pushed to advantage in shipping circles and will be fitted on a majority of the high classed tonnage now being put afloat.



8-INCH BLOCK WITH HOOK ATTACHED, SHOWING MODE OF FITTING HOOK TO BLOCK; ALSO MANNER OF ATTACHING THE SHACKLES TO BOAT.

TRANSFERS OF VESSEL PROPERTY.

The following recent transfers of vessel property have been recorded at the Milwaukee customs office:

Schooner Yacht Merlin—Jesse D. Sarles to Frank K. Bull of Racine, the whole, $1. Schooner Quickstep—John D. Wanvig, to Jacob E. Jacobson of Milwaukee, one-half, $1500. Same vessel—Jacob E. Jacobson to J. H. Johnson of Wauwatosa, one-fourth, $750. Schooner Charles E. Wyman—Michael Hilty to John D. Wanvig of Milwaukee, one-eighth, $1. Steamer Nettie Denisen—John Denessen to William Denessen of Fort Howard, one-fourth, $800. Tug Satisfaction—Oley Groh to Edward Grohof, Sheboygan, one-half, $3750. Steamer George C. Markham—Christina Sheriffs to John D. Wanvig of Milwaukee, one-eighth, $1.

SPRING CHARTERS AT DULUTH.

The Commercial Record, Duluth, has the following to say in a recent issue regarding the freight outlook at the head of the lakes:

"Chartering for grain cargoes to go out at the opening of navigation has been done quite extensively since the first of the year. Vesselmen are inclined to shade the estimates of shippers on the amount of wheat for which charters have been made to go forward at once at the opening of navigation, but one shipper claims to have a list of the boats chartered and he puts the amount of wheat for which vessel room has been placed for shipment at the opening at 2,000,000 bushels. Vesselmen refuse to give any estimates, but as previously stated poohpooh the 2,000,000 bushel figure.

Most of this wheat was chartered at 2½c per bushel, though first contracts were made at 2⅜c. The first charters were made when the iron ore product promised to be larger than seems likely since the combination among the Bessemer producers was consummated. Restriction of the iron ore output means more boats to go into the carrying of wheat and the adding of the whaleback fleet to that of Pickands, Mather & Co., makes the dual fleet a very formidable competitor to meet in the ore carrying trade. There has been some talk of 2 cents as a basis of charters for wheat for July shipment, but so far as can be learned no charters have been closed for that month.

Shippers claim that fully half of the wheat in store in Duluth elevators—or over 4,500,000 bu.—has been sold for shipment. These contracts cover the period from May to and including August.

Inquiry does not reveal that any charters have been closed for early iron ore shipments, though the going wheat rate would indicate an opening rate of 90 cents from the head of the lakes. Vessel owners are awaiting for the Minnesota fleet to set the pace. With a fleet of 40 boats and an inside track on Minnesota company cargoes this dual fleet has a carrying capacity of 1,500,000 tons, which is about one quarter of the amount of ore vessel agents expect to be taken from Lake Superior this season. They say that the Pickands-Mather boats will set the rate anyway, and the only thing to do is to await their action.

There has been little talk about lumber freights. So far as can be learned lumbermen have inquired about the outlook only for information and not for the purpose of loading out a big pile of lumber at the opening.

Vessel agents consider that the situation is the paucity of corn for shipment. Lake Michigan carriers are likely to be diverted to Lake Superior for this reason and with so many looking for business rates must obviously be weak."

NOTES.

ATTORNEY-GENERAL OLNEY has given an opinion to the secretary of war holding that army and navy officers come within the scope of the income tax law. A few weeks ago Secretary Lamont raised the question whether, under this statue, officers of the army will be subject to the tax where their incomes are above the $4,000 limit by reason of allowances for quarters and rations and mileage. The question has agitated the army and navy for some time and it was thought well to secure a legal opinion on the question. In his opinion on the subject, the attorney-general holdsthat the law applies to all incomes above $4,000 regardless of their character, and he states that paymasters must deduct from the amount disbursed to officers on their individual account, the tax of 2 per cent in all cases where it aggregates the sum mentioned. The attorney-general says his views are the same as those expressed by a predecessor in passing on the income tax law of 1864. It is expected that the war and navy departments will issue regulations predicted on this opinion.

AS compiled by *The Iron Trade Review*, the total production of the iron mines of Lake Superior for the year just ended was 7,775,494 gross tons. Of this quantity, 2,049,107 tons were produced by the mines of the Marquette range, 1,137,949 tons by those of the Menominee range, 1,834,086 by the Gogebic mines, 948,513 by the Vermilion mines and 1,785,839 by the Mesaba mines. The total production of all the mines of the Lake Superior region up to date is 87,058,922 gross tons, of which 41,808,735 tons, or nearly half, is to be credited to the mines of the Marquette range.

AT the annual meeting of the Interocean Transportation Co. at Milwaukee, it was voted to surrender the charter of the corporation to the state and locate business headquarters elsewhere. The choice of a new location was intrusted to the board of directors. This change has been brought about through the exorbitant taxation of vessel property at that port.

THE Wilson line steamer Persian Monarch formerly in the trans-Atlantic trade, has been converted into a full rigged four-masted sailing ship of 5,000 tons burthen, she is 380 feet in length, or from the tip of her jibboom to the end of the spankerboom, 420 feet, 43 feet beam and 25 feet depth of hold. The few sailing vessels that approach the Persian Monarch in size are the French fiye-masted steel bark France, 3,624; the British four-masted ship Liverpool, 3,330 tons; the American four-masted ship Roanoke, 3,400 tons, and the American four-masted ship Shenandoah, 3,258 tons. The Persian Monarch's gross tonnage is 3,923, and she will be given an American register at the earliest opportunity.

THE MARINE RECORD

ESTABLISHED 1878.

PUBLISHED EVERY THURSDAY, AT 144 SUPERIOR ST., (LEADER BUILDING), CLEVELAND, O.

IRVING B. SMITH, CAPT. JOHN SWAINSON, } . . . PROPRIETORS

BRANCH OFFICE:

CHICAGO, ILL., ... 238 Lake Street.

THOMAS WILLIAMS, Associate Editor.

SUBSCRIPTION.

One copy, one year, postage paid, . . . $2 00
One copy, one year, to foreign countries, . . $3 00
Invariably in advance.

ADVERTISING.

Rates given on application.

Entered at Cleveland Post Office as Second-class Mail Matter.

CLEVELAND, O., JANUARY 31, 1895.

THE following nations have officially announced to the United States government their purpose to put into effect the revised international rules for preventing collisions at sea, drafted by the Washington Marine Conference, on March 1st, with the United States: France, Canada, Sweden, Russia, Portugal, Spain, Austria-Hungary, Japan and the Netherlands. The British Government have postponed enforcing the rules until autumn.

ALTHOUGH contracts for new lake tonnage amounting in value to about two million dollars have been placed at lake shipyards within the past month, there are several important and large orders for new high-classed steel steamers just about ready to be closed. The Minnesota Steamship Co., of Cleveland, are still receiving bids on the 420 feet steamers they intend to build and plans are being talked of for a large cargo steamer for another Cleveland firm, though it is considered too early to publish full particulars until the specifications are completed.

ANENT the recent collision in the North Sea or German Ocean between the Atlantic liner Elbe and the Scotch steamer Crathie whereby upwards of 300 of the passengers and crew of the Elbe are slated as being lost, while the other steamer reached port safely, there seems to be something to explain away. It is the bounden duty of one vessel to stand by another in case of collision, nor is there any possible excuse for not doing so unless it can be positively shown that each are in a sinking condition and unable to render any assistance. It is to be hoped that the charge of cowardice against the Scotch steamer and the consequent loss of the officers' certificates will not be necessary after a full investigation has been held relative to the causes that led up to the collision, and the singular action of the Crathie afterwards.

WE have been favored with copies of the Senate and House bills numbered 2653 and 8635 respectively now before the committee on Commerce and the committee on Merchant Marine and Fisheries being a measure to regulate navigation on the Great Lakes and their connecting and tributary waters. Harvey D. Goulder, Esq., counsel for the Lake Carriers' Association acting under the advice of the Lake Shipmasters' Association and the several committees of the Lake Carriers' Association framed the system of rules which it is expected will be enacted into law at this term of Congress. Senator Burrows of Michigan and representative White of Cleveland introduced the bills which have been favorably acted upon in committee after hearing arguments from a delegation of shipmasters and owners. The new rules are inclusive, safe and positive so that by a strict attention thereto collisions will be as near a thing of the past as it is possible to have them among men who are not infallible, for of course, the usual errors of judgment which humanity is prone to will crop out occasionally though only to shed the lustre of correctness over the new rules as at present formulated. From a close perusal of the several articles contained in the "Rules of the Road" it is safe to say that even the most expert men in the business could find little to improve, reject or add to the code to make it a more distinct guide for lake pilots.

AN UNWARRANTED ASSUMPTION.

Mr. Sayers, chairman of the House committee on appropriations, has been expressing himself this week in somewhat cynical terms relative to the past and present action of the Lake Carrier's Association in their just and laudable efforts to secure adequate improvements in aids to navigation on the Great Lakes. It is quite evident from the following colloquy contained in the Congressonal Record of January 23, that Mr. Sayers is not only opposed to endorsing essential aids to northwestern commerce, but he goes somewhat beyond his province in casting aspersions on the only association of interests which attends to the welfare of lake commerce, transportation and kindred interests and without whose aid it is safe to say that the commercial development of the west and northwest would have been at least a decade behind its present standard. The following is a literal reproduction from the columns of the Congressional Record, on the discussion to provide an appropriation for a light at Grand Marais, Lake Superior.

Mr. Daniels: The Light-House Board have recommended to congress the construction of this light and its maintenance there; and the Lake Carrier's Association, which is a very important association, representing the lake interests and the lake carrying interests, have recommended the construction of the work and the erection of a light and fog signal at that point.

I desire to have read for the information of the House what the Lake Carrier's Association have said on the subject.

Mr. Sayers: I will say to my friend that we have done more in this congress for the Lake Carrier's Association than for all of the country besides, as far as this branch of the service goes, and the bills will show it.

Mr. Payne: Well, that simply shows that you appreciate their good opinion.

Mr. Sayers: There are more appropriations made in accordance with the request of the association to which the gentleman refers than of any other body in the country.

Mr. Payne: That is just in accordance with what commerce wants.

Mr. Simpson: Does not the gentleman from Texas believe that the internal navigation is more important than all the rest of our commerce?

Mr. Sayers: Well, that may be the gentleman's opinion; but it is not necessarily so.

Mr. Payne: Here is a harbor of refuge which the government decided some time ago was necessary and indispensable both, because they have decided by appropriations $368,000 for the improvement of this harbor, simply as a harbor of refuge. Now it is used as a harbor of refuge when it is light enough for vessels to enter by daylight.

Mr. Van Voorhis, of New York: But when refuge is necessary they can not use it?

Mr. Payne: But, when they need refuge, when it is dark or foggy, vessels are not able to enter this harbor of refuge, because there is no light there. In other words, the protection for which the government has spent $368,000, is lost when the protection is needed.

If there is any case that is more necessary than another, so much more necessary that it is called, in this technical language "indispensable," it seems that this is one of those indispensable cases. It seems, further, Mr. Chairman, that the committee on appropriations do not altogether rely on what the Light-House Board say, but they also rely upon what the Lake Carriers' Association say. A communication has already been read by the clerk, showing what the Lake Carriers' Association say in regard to the necessity for this light. So it seems to be admitted on all hands, and in the judgment of everybody whose attention has been called to it, that this is both necessary and indispensable. It only requires an expenditure of $15,000. It was authorized by congress two years ago. Everything conspires to compel this committee to do this little act of justice by that greatest of all commerce in which we are interested, and to give this little pittance of $15,000 to afford a light which will render safe the navigation in that part of Lake Superior, and which will enable our vessels to enter this harbor of refuge when there is a fog, and when it is dark, when they need to enter there, as well as in the daylight, when they do not care so much about it.

Mr. Sayers: Mr. Chairman, I desire to call the attention of the committee to the fact that this is one of the 53 light-houses that were "log rolled" through this House two years ago, under what was known as the omnibus bill. A combination was formed, I suppose at the instance of the Lake Carriers' Association and others, and a bill was put through the House carrying 53 light-houses and other structures of kindred character.

Mr. Van Vorhis, of New York: Do you claim that this is a fraud because of that fraud?

Mr. Sayers: Unless the gentleman calls "log-rolling" fraudulent. That is all.

Now it seems to us that the pessimistic views and expressions of Mr. Sayers in this connection is an unwarranted and evil assumption which he has taken aboard and clings to in his official capacity to the derogation of large national interests, also, that the different phases of western civilization and commercial development heralded, accomplished and made progressive through the assistance given by these aids to navigation on the lines of modern transportation facilities are simply beyond the limit of Mr. Sayers' comprehension to grasp, as they would by that of a ploughboys, while the obstinacy with which he seemed to stick to the text of his ignorance is only paralleled in the course taken by the individual juryman against his eleven colleagues. However, it is not to be expected that the Texas congressman can be enlightened during the short session which Congress has yet to run, but it is to be hoped that long before the honor of acting as chairman of the appropriation committee is thrust upon him again he will have been taught the value of a beacon, so placed as to guide pilots into a harbor of refuge when the violence of the elements make it imperative for the safety of the lives and property committed to their charge to seek the nearest shelter.

PROF. G. FREDERICK WRIGHT, of Oberlin College, O. ably supports the views taken by Major Ruffner, corps of engineers, U. S. Army, in his opinions relative to the effect which the Chicago Drainage Canal will have on the level of the lower lakes. Prof. Wright shows that the quantity of water required to be turned into the drainage canal viz. 600,000 cubic feet per minute when it is first opened will be equal to about 5 per cent of the quantity that now flows over Niagara. When the population of Chicago reaches two millions, the law under which the canal was constructed provides that the quantity of water passing through it shall be doubled, making an inflow of 1,200,000 cubic feet of water per minute, or 20,000 cubic feet per second. That means that at least 10 per cent as much water as now passes over Niagara will be diverted from the lakes to the Mississippi. Major Ruffner, of the corps of engineers of the United States Army, estimates that when the drainage canal is first opened the result will be to lower the level of Lakes Michigan, Huron and Erie, and the connecting rivers at least nine inches, and that when the canal is operated to its full capacity, the fall in the water level will be eighteen inches. This, Prof. Wright says, may have but little effect in the rainy season, but during the late summer and autumn he is certain that it will seriously interfere with navigation. He declares that the vessel owners and all who are interested in the commerce of the lakes should realize the danger and do all they can to avert it. As a preventive measure he suggests that a dam be constructed across the lower end of Lake Superior at the "Soo," which will raise the level of that lake two feet and store enough water during the rainy season to supply the lower lakes during the late summer and fall. The plan which has formerly been mentioned for curtailing the outflow at Niagara, was not treated of by Prof. Wright, yet this method would appear to have the most merit and would result in the greatest good to the greatest number without detracting from the benefits enjoyed by any class or interests or only so in a minor proportion.

THE loss of the Chicora, on Lake Michigan, teaches what ought to be a well-learned lesson, viz: that special tonnage is required for a special trade. While the Chicora was a staunch, faithful, well built and equipped vessel in every respect, for the ordinary freight and passenger traffic, she was by no means built for or capable of entering the lists as a powerful crusher of ice. The Ste. Marie and St. Ignace are ice-crushers and under general conditions easily keep a lane of clear water open across the Straits of Mackinac throughout the winter, and this, too, without stopping at any time during the season to effect repairs of any sort. The same builders constructed the three vessels named, and, when completed, each represented the most skillful workmanship and the highest class of tonnage engaged in their particular trade. The moral: A handsome carriage makes but an indifferent express wagon.

OUR thanks are due the branch Hydrographic Office Navy Department at Cleveland, for copies of several charts received this week. The N. Atlantic Pilot chart besides being what its title implies contains an essay on the mercurial barometer showing its construction, uses and explanation of the working of same, on the back of the chart is given the new sailing and steering rules which are to come into effect, according to the president's proclamation next March. Another of the charts shows the track of storms for the period of six years from 1888 to 1893 inclusive and this graphic delineation also contains valuable instructions on the manner of handling a vessel

when caught in any of these, we prefer to call them hurricanes, in preference to cyclones, although they are cyclonic right enough. A third chart showing the lines of equal magnetic variation from the equator to sixty degrees north gives the rules for applying variation and deviation on a compass course to obtain the true, or geographical course and *per se* the method for knowing what course to shape by compass when only the true course is given. It is, of course, out of the question to decide which of these several valuable delineators tells most, or may be thought the most interesting, yet the supplement to the pilot chart for November showing the average tracks of storms over the northern hemisphere from 1878 to 1887 as compiled from deductions by the U. S. Weather Bureau taken from simultaneous international meteorological observations must be full of interest to anyone desiring to note the laws of the gyration of winds and the regular paths over which the major portion of storms occurring in the northern hemisphere travel.

THE commerce through the St. Mary's Falls Canal, Mich., has increased from a total of 1,567,741 tons in 1881 to 13,195,860 tons in 1894. It is, of course, only necessary for a member of Congress to glance at the foregoing official figures to give him backbone enough to champion in the halls of legislation the most liberal expenditures and appropriations for keeping this gateway to Lake Superior, and as a consequence the increasing commerce of the west and northwest up to the standard of future requirements in the development of transportation and commerce. Furthermore, and to enhance the foregoing figures it may be noted the vessel passages through the canal, sail and steam, in 1865 aggregated 997, while in 1894 a total of 13,884 registered craft locked through the basin. The coal tonnage in 1855 the year the canal was opened amounted to 1,414 net tons in 1894 this traffic amounted to 2,797,184 tons. In 1855 there was shipped from Lake Superior and accordingly locked through St. Mary's Falls Canal the paltry amount of 1,447 net tons of iron ore while four decades later or for the season of 1894 the canal was called upon to handle a grand total of 6,548,876 net tons. Flour, wheat, lumber and other commodities show an equally surprising increase, so that it would appear, if we judge from the past, that it is the bounden duty of the country to avail itself of the most economical methods of transportation of the common necessaries of life, by keeping the gateway to Lake Superior and the tributary channels improved up to that point rather a decade in advance than barely level with the times.

IMPROVED EQUIPMENT AND NEW LAKE ROUTE.

The Lake Michigan & Lake Superior Transportation Co., Chicago, has just closed a contract with the Cleveland Ship Building Co., to construct for the S. S. Manitou, four new Scotch-type boilers, each 11 feet diameter by 12 feet long, in order to substitute them for the boilers now aboard the Manitou. The management of the company has ascertained that the steam capacity of the boilers now on board the Manitou was not sufficient to supply enough steam for her triple expansion engines in order to work the same to the high rate of speed which was expected to be developed, and in order to accomplish the desired result, they have decided to make the necessary changes. The new boilers will give the Manitou really more power than she requires, and it is expected that she will be able to develop a speed of from 18 to 20 miles an hour, thus making her one of the fastest boats on the lakes, an advantage which in itself will amply repay the company for the expense incurred.

Still another change will be made in the route of the Manitou, and with the opening of the passenger season this year, she will make three round trips each week between Chicago and Mackinac Island, via Harbor Springs, Petoskey, Charlevoix, etc. This will give five sailings each week to and from Mackinac Island in connection with the other steamers of the line.

A LAKE MICHIGAN CAR FERRY PROJECT.

Muskegon papers announce the inauguration among local capitalists of a project for the establishment of a permanent line of railroad car ferries between Muskegon and Milwaukee with two large steel whaleback steamers. It is expected a stock company with $500,000 will be formed, it is said. Whaleback car ferries capable of carrying forty carloads of freight each and of making the run between Milwaukee and Muskegon in six hours loom up in the mind's eye of the projectors. Thus each steamer could make two round trips daily if necessary, and handle 320 carloads of freight both ways. The claim is also made that financial assistance has been offered by Milwaukee capitalists if a sufficient interest shall be taken at the Michigan end of the line. In conclusion, it is asserted that a committee of four energetic business men of Muskegon is making every effort to bring the organization to a successful issue, and the claim is set up that if $100,000 of the stock can be placed at Muskegon the balance of the capital can be sold in Milwaukee.

AN ATLANTIC LINER FOUNDERED.

The North German Lloyd's Atlantic Line steamer Elbe, bound from Bremen to New York, foundered on Wednesday morning in the North Sea or German Ocean after colliding with the British steamer Crathie, from Rotterdam to Aberdeen, the latter vessel reaching port safely, though badly damaged as a result of the collision.

From the press cables now at hand it is feared that upwards of 300 people, passengers and crew of the Elbe, lost their lives in the collision, as reports have been received of only nineteen being saved out of a total of 350 persons.

ALL HOPE OF THE CHICORA GIVEN UP.

All hopes for the safety of the crew of the Graham & Morton Line steamer Chicora, engaged in keeping open winter communication on Lake Michigan, has now been given up. She left Milwaukee for Benton Harbor twelve days ago and the large quantity of wreckage picked up on the east shore leaves no longer any doubt of the vessel's complete destruction and the loss of all hands, as even if any members of the crew had taken to a raft or other means of getting clear of the foundering vessel they must long ago have succumbed to the inclement weather prevailing over the lakes during the past two weeks.

A RESUME OF THE COAL, ORE, GRAIN AND SHIPPING OUTLOOK.

The Hocking Valley miners have pretty thoroughly organized themselves in the matter of selling lake coal. It has been practically agreed that all of the Hocking Valley mines shall sell their coal through Morris, Ellsworth & Co., of Cleveland, at a stipulated price. A series of percentages is being arranged, and each mine in the valley will contribute its per cent. of the total of coal sold, restricting this amount to its per cent. of the lake trade, plus that required by local consumption. This will not only prevent miner's competition among neighbors, but it will reduce the office and traveling expenses incident to the work of selling the coal, which have heretofore consumed a considerable proportion of the profits. This is very similar to a plan proposed by G. G. Hadley, the extensive Toledo coal dealer and vessel owner, to the other mines along the line of the Toledo & Ohio Central Railroad, some six weeks ago, and which fell through, it is said, by reason of the strong competition between the Sunday Creek and the Hadley mines.

The coal operators of the Massillon district, among whom there is a better understanding and more harmony, perhaps, than in any other mining region, are very much impressed with the promising state of affairs in the Hocking Valley district, and are talking very strongly of a similar arrangement. The eyes of all are just now upon the Pittsburg district, in the faint hope that the competing interests there, which seem to be always at odds, can agree upon some sort of a harmonious arrangement that will give the entire coal industry some show for profit in its lake trade this season.

It seems to be conceded by the ore dealers that the only means of getting anything like a price for ore a year hence, will be to reach an agreement to absolutely refrain from bringing any considerable amount of iron ore down from the mines next season until after sales have been made. The sales agent will be very glad if they succeed in obtaining as much as $2.90 this winter for the higher grades of ore. as against $2.75 per gross ton a year ago as there seems to be no indication of an improvement in the pig and structural iron market to warrant a better figure. Furnace men have so far, it is said, carefully refrained from asking for prices, secure in the belief that a large amount of unsold ore was brought down last season, the agents having been unable to resist the temptation to speculation which was offered by low freight. The ore men have come to the conclusion that the day of high freights is over, or that they control enough tonnage to reimburse themselves in the event of any temporary spurt. It has not, therefore, been difficult to induce them to agree to bring down no unsold ore, and they have been given moral support in this attitude by the agitation which has lately been stirred up in the lake counties of Ohio by those tax gatherers who go about seeking what they may devour, their voracity seeming to extend even to the "goose that lays the golden eggs."

The low rates on Chicago grain by lake have caused the railroads to take alarm and to draw comparisons. The present authorized rail rate on grain from Chicago to New York is 20 cents per hundred pounds, or about 12½ cents per bushel of wheat. This rate is being secretly cut, it is stated, but even a slight reduction does not compare with the 2½ cent lake rate from Chicago to Buffalo, added to a 5 or 6 cent rate from Buffalo to New York. A well known traffic official of a railroad running east from Chicago enlarges on the rapid increase of boats of large tonnage. He figures in this way: "Such boats can easily carry 3,000 tons, the equivalent of 150 heavily loaded cars. They make almost railroad time between Chicago and Buffalo, and will last fifty years or more, if properly handled. Figuring closely, the trip to Buffalo costs these boats about $200 for fuel, $50 for provisions, $150 for wages, $50 for incidentals and $80 for insurance, a total of $530 for the trip, exclusive of wear and tear and interest on money invested. With a cargo of 3,000 tons this makes a net cost of about 17½ cents per ton for the trip. Adding interest, wear and tear and the cost of handling grain at Chicago and Buffalo, the expense, plus a liberal profit, ought not to be more than 40 cents per ton. This is but 2 cents per hundred, as compared with the rate of 12½ cents, which is the Chicago-Buffalo proportion of the 20 cent rate."

While the estimates above quoted show that the railroad man referred to is something of a tyro in figuring the expenses of vessels, and has left out the very material items of tug bills and the risk of delays, there still remains such a difference between the rail and the lake rates as serves clearly to show that the vessels might unite in demanding a higher rate for carrying grain and still be certain of a monopoly in the grain carrying charges. The railroad man continues: "It is this kind of competition, railroad men now agree, that they must meet all the year around. These boats are abundantly able to fill up the East with a year's supply of grain in the seven or eight months of open navigation. Consequently it matters not when navigation is closed. Any grain which goes by rail must be landed in the East at a total cost not materially greater than upon the grain which goes by boat."

Since it is already foreshadowed that the lake freight business of the future is to be handled by a more limited number of firms, so far as the shipping side of the contract is concerned. Will it not naturally follow that the management of the boats will change in the same general scale and that the lake ships will gradually be resolved into larger and larger lake fleets, taken care of and directed on plans which will rival in system the management of the most prosperous railroads. Every year the competition of ore, grain and coal carriers becomes more and more ruinous by reason of the disproportionate increase of tonnage. Bitter experiences seem as yet to lead to no concerted action and the question naturally arises, Will not the problem work out its own solution? The sale, under the hammer of the United States Court, of the fine steel steamship Emily P. Weed as a part of a fleet of vessels on all of which much less money was realized than the construction of the Weed alone cost her builders, is something to reflect upon. The change may require years to effect, but the weak will eventually be crowded to the wall if the present system of ruinously low freights continues. One class will reap the benefits from the misfortunes of the other. Unless some great change occurs, it is safe to say that the steel boats of the lakes, exclusive of package freighters, will be owned by half a dozen large companies ten years hence.

MARITIME LAW.

KALT vs. SHIP KENILWORTH.

U. S. District Court, Southern District of New York.

COLLISION—SAIL VESSELS MEETING IN FOG—DEFECTIVE SIGNALS—FAILURE TO STAND BY INJURED VESSEL—ACT SEPT. 4, 1890.—1. A full rigged ship and a schooner were in collision on the high seas at night and in a fog. The hulls of the vessels did not touch, but the ship's fore yard raked the masts out of the schooner. This was visible to the master of the ship, nevertheless he did not stay by the schooner. The Act of Congress of Sept. 4, 1890, provides that if the master of a vessel in collision neglects to stand by the other vessel, the collision shall, in the absence of proof to the contrary, be deemed to have been caused by his wrongful act, neglect or default." Held, that "proof to the contrary" was not shown, inasmuch as the evidence indicated an improper disposition of sails, an insufficient lookout, and probably a negligently sounded fog horn.

2. Although the vessels were approaching each other slowly, in a light wind and noiseless sea, only two signals were heard by either vessel, given probably when the vessels were 1,000 or 1,200 feet apart, Held, that this fact indicated lack of a proper watch and proper sounding of fog horns on both vessels, the evidence also showing that the schooner had an old horn, and had been using ordinary tin horns earlier, held, that the schooner as well as the ship was in fault, and that the damage should be divided.

BROWN J., New York, Nov. 30, 1894.

KANTER vs. SALISBURY.

U. S. District Court, Southern District of New York.

CONTRACT—HIRE OF BOAT—AGREEMENT TO PROCURE INSURANCE—AGENT'S AUTHORITY TO BIND OWNER.—Libellant hired defendant's barge to carry cement, the contract being made through M, an agent of defendant. By the contract defendant agreed to insure the cement at libellant's expense, and also, to indemnify libellant in case of damage to the cement by getting wet, such damage having occurred, this suit was brought. Held, that the agreement to insure was really an agreement to procure insurance, which is not a maritime contract, also, that M had no authority to bind defendant by a contract to procure insurance, under the circumstances; but that the agreement to idemnify libellant in case of damage by wetting, was an agreement to provide a sufficient and seaworthy boat, or pay damages, and this agreement was within the authority of the agent and was afterwards ratified by defendant. The cement having suffered damage by leaking of the boat under circumstances which showed an unseaworthy condition, held that the defendant was liable.

BROWN, J., New York, Nov. 30, 1894.

COAST WATERS.

Tide waters, navigable from the ocean, by the ocean craft, are "coast waters," within the act of March 3rd, 1885 (23 stat. 438 et. seq.) adopting the revised international rules and regulations for preventing collisions at sea (article 21 of which embodies the rule "keep to the right") and declaring that they shall be the rules for navigation on the high seas and in all coast waters, except as are otherwise provided for; the exception being defined by the further provision that "nothing in these rules shall interfere with the operation of a special rule duly made by local authority, relative to the navigation of any harbor, river or inland navigation."

Part of a river not within the territorial limits of a city, though part of its harbor is not affected by a rule of navigation for the harbor ordained by the city, under provision of act March 3d, 1885, that a special rule, duly made by local authority, relative to the navigation of any harbor, shall not be interfered with by the international rules of navigation.

When the steamers Plymothian and Victory, the former going 4 miles and the latter 6 miles an hour, were at a distance of 1⅛ miles, approaching each other, in clear daylight, along a narrow channel, which was in full sight, and governed by international rule 21 ("keep to the right"), the Plymothian, which was obeying the rule, signaled the Victory, which was not obeying it, that they should pass port to port. When over 1,000 yards distant the Victory answered with a cross signal, that they should pass starboard to starboard, without there being any cause therefor, and without giving any signal to indicate that there was such cause. The Plymothian thereupon repeated her signal, which the Victory promptly answered with a cross signal, whereupon both gave alarm signals and backed, without, however, preventing a collision. Held, that the Victory was liable therefor, and the fact that, shortly before the collision, she had a schooner under her starboard side, and that this and two other schooners, which she had met shortly before, passed on her starboard, was no excuse. The fact that a steamer had no lookout forward at the time of a collision will not render her liable for the cargo, as having contributed to the collision, she being navigated at the time by a pilot, with her master on the main bridge acting as lookout, and she having omitted nothing which she ought to have done, or which she would have done had there been a lookout in her bows. The Victory—District Court, E. D. Virginia.

BUFFALO ELEVATOR CHARGES.

The pooling of the shoveling of the various elevators at Buffalo has caused considerable discussion since it was first broached, though it is a question what changes will become operative this year. The matter was brought before the Lake Carriers at the Detroit convention and was discussed in all its phases, the scheme spoken of being one that was thought to be one of the most feasible to adopt.

There is no doubt that something will be done, but the committee of the Lake Carriers has not yet decided on a plan. The elevator authorities have taken no direct action yet, but the feeling in favor of a reduction among vessel men is so general that it is almost assured. There is an entire absence of the friction that existed among the elevator and vessel men last winter. The experiences of last season are too bitter for them to be obstinate now. The plan proposed is for the elevators to give up direct control of the steam shovels and lease them to someone, but the next step, which has to do with the fixing of the charges, has not been arranged at all. It is enough to know now that the rates will be reduced, however it is done. It is hoped that the formal meeting with the elevator authorities can be held in a few days, so that the Lake Carriers' committee can make an early report.

It may be that the extent of the overcharges has not been fully appreciated by all vessel men. Had the rate of $3 50 per 1,000 bushels for sail and $3.75 for steam vessels been all there was of it, there would have been much less cause for complaint, but there were always extra charges for remnants that were left over from one elevator to another and if the grain was at all out of condition up went the rate even if the flow to the elevator leg was as free as ever, and if it would not flow the rate was $10 per 1,000. The new rate is to be uniform for everything, and though the reduction is not likely to be very great it will be quite material. The elevators will not suffer much by the change, for it will cut off a lot of small profits that were not really legitimate at any stage of the business.

INSURANOE IS NOT COMMERCE.

In the United States Supreme Court a decision affecting the right of the state of California to punish offenders against the law forbidding the placing of business in companies not complying with the laws, the question of insurance not being commerce is again brought up. In an opinion for the court, Mr. Justice White said on this subject:

"In the case last cited the precedents were fully reviewed and the governing reasons of the law upon this subject were clearly elucidated.

"The contention here is that inasmuch as the contract was one for marine insurance, it was a matter of interstate commerce, and as such beyond the reach of state authority and included among the exceptions to the general rule. This proposition involves an erroneous conception of what constitutes interstate commerce. That the business of insurance does not generally appertain to such commerce has been settled since the case of Paul vs. Virginia, Supra. (See also Philadelphia Fire Insurance Co. vs. New York, 119 U. S., 110, and authorities there cited.) While it is true that in Paul vs. Virginia, and in most of the cases in which it has been followed, the particular contract under consideration was for insurance against fire, the principle upon which these cases were decided involved the question of whether a contract of assurance, of any kind, constituted interstate commerce. The court in reaching its conclusion upon this question was not concerned with any matter of distinction between marine and fire insurance, but proceeded upon a broad analysis of the nature of interstate commerce and of the relation which insurance contracts generally bear thereto. Thus in Paulv s. Virginia, the court speaking through Mr. Justice Field, said: 'Issuing a policy of insurance is not a transaction of commerce. The policies are simply contracts of indemnity by fire, loss against entered into between the corporations and the assured, for a consideration paid by the latter. These contracts are not articles of commerce in any proper meaning of the word. They are not subjects of trade and barter, offered in the market as something having an existence and value independent of the parties to them. They are not commodities to be shipped or forwarded from one state to another and then put up for sale. They are like other personal contracts between parties which are completed by their signature and the transfer of the consideration. Such contracts are not interstate transactions, though the parties may be domiciled in different states. The policies do not take effect—are not executed contracts—until delivered by the agents in Virginia. They are, then, local transactions, and are governed by the local law. They do not constitute a part of the commerce between the states any more than a contract for the purchase and sale of goods in Virginia by a citizen of New York whilst in Virginia would constitute a portion of such commerce.'"

Superintendent Durfee, of the Illinois insurance department, states in regard to the admission of Lloyd's to do business in the state of Illinois as follows:

"Lloyds associations will be licensed to do business in Illinois on complying with the conditions of Sections Nos. 210 and 211 of insurance laws, and with general fire and marine law; also must deposit $200,000 by irrevocable deed of trust with some solvent trust company, approved by myself for the security of all policyholders in the United States."

The American Lloyds, Assurance Lloyds and the Manufacturers are stated as being ready to enter the State. Superintendent Wadill, of the Missouri insurance department, has also offered to license Lloyds on practically the same but a broader basis. He demands the deposit of $200,000 in some trust company, but practically makes no other conditions.

COMPARATIVE STATEMENT OF COMMERCE THROUGH ST. MARY'S FALLS CANAL, MICHIGAN, FOR THE SEASON OF 1893 AND 1894.

ITEMS.	Designation.	SEASON. 1893.	SEASON. 1894.	INCREASE. Amount.	INCREASE. Per Ct.	DECREASE. Amount.	DECREASE. Per Ct.
Vessels (a)	No	12,008	14,491	2,483	21		
Lockages	No	5,553	6,431	878	16		
Tonnage, registered	Net tons	9,849.754	13,110,366	3,260,612	33		
Tonnage, freight	Net tons	10,796.572	13,195,860	2,399,288	22		
Passengers	No	18,869	27,236	8,367	44		
Coal, hard	Net tons	3,008,120	532,870			210,936	07
Coal, soft	Net tons		2,264,314				
Flour	Barrels	7,420,674	8,965,773	1,545,099	21		
Wheat	Bushels	43,481.652	34,869,483			8,612,169	20
Grain (other than wheat)	Bushels	2,405.344	1,545,008			860 336	36
Manufactured and pig iron	Net tons	89.452	60.659			37,793	32
Salt	Barrels	228,730	237,461	8.731	04		
Copper	Net tons	87,530	99,573	12,043	14		
Iron ore	Net tons	4,014,556	6,548.876	2,534,320	63		
Lumber	M. ft. b. m.	588,545	722,788	134,243	23		
Silver ore	Net tons	2,470	412			2,058	83
Building stone	Net tons	19,426	21,417	1,991	10		
Unclassified freight (b)	Net tons	415,180	451,185	36,005	09		

NOTE (a)

Steamers	10.208
Sails	3,676
Unregistered	607
Total	14,491

NOTE (b)—Included in the item of unclassified freight is 1,468 tons of wool and 382 tons of hides.

Canal open to navigation during season of 1893—219 days.

Canal open to navigation during season of 1894—234 days.

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WALTER F. COBB, Vice President and Treasurer.

W. I. BABCOCK, Manager.
O. R. SINCLAIR, Secretary and Asst. Treas.

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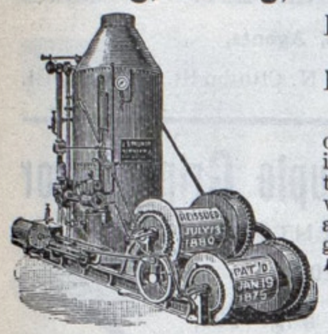

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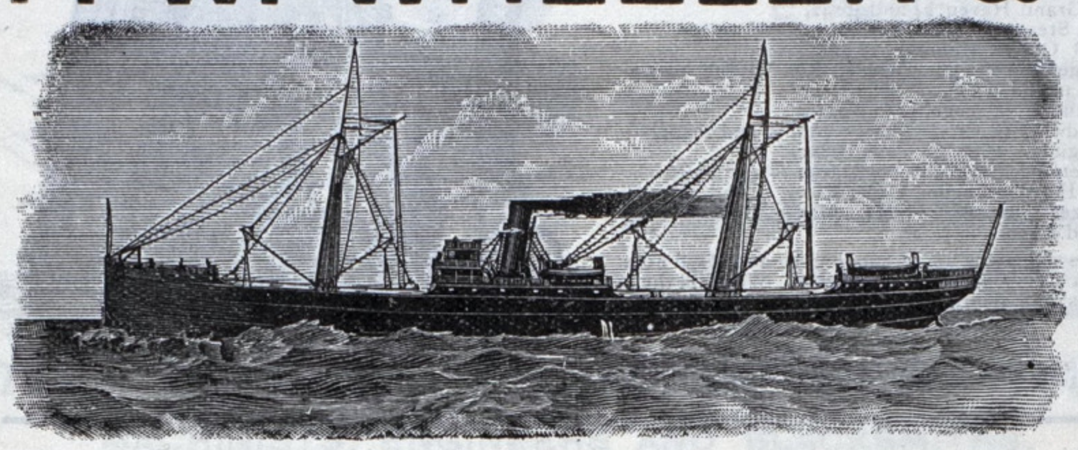

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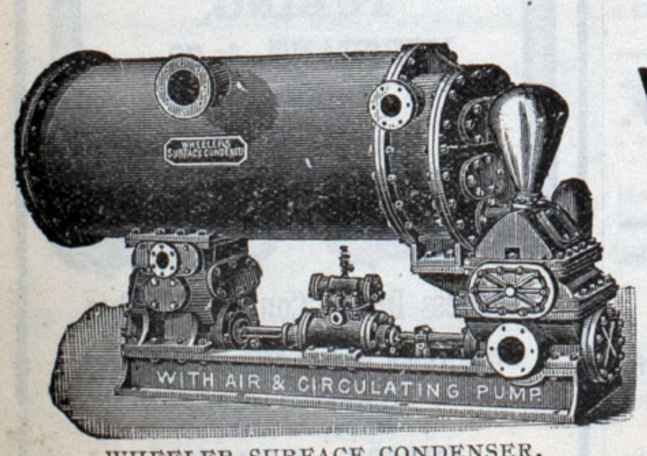

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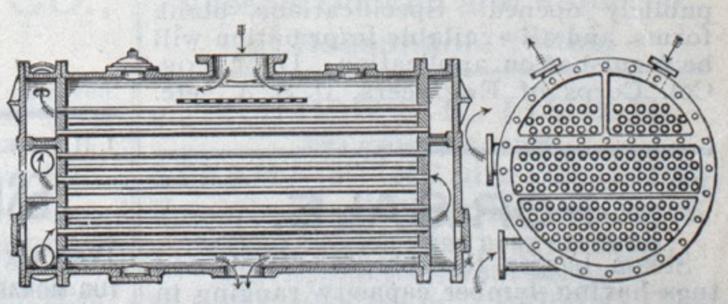

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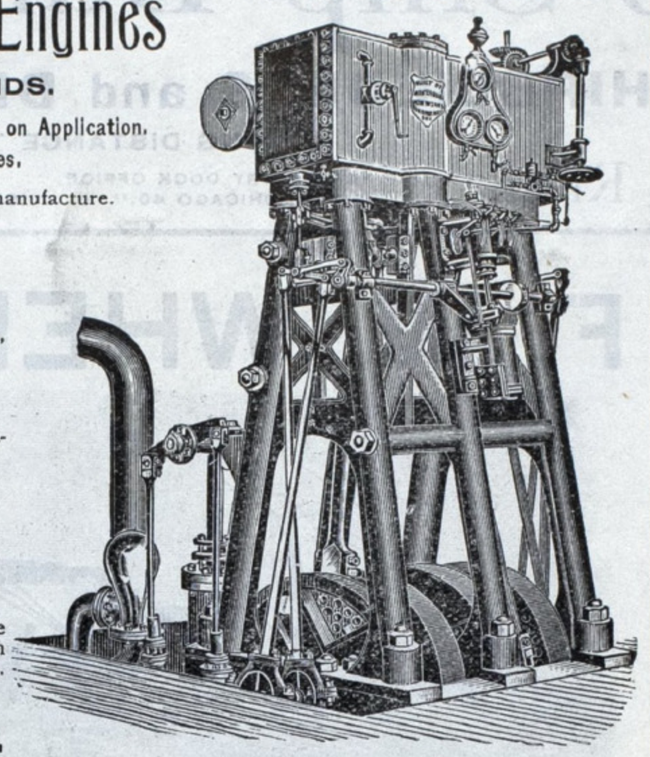

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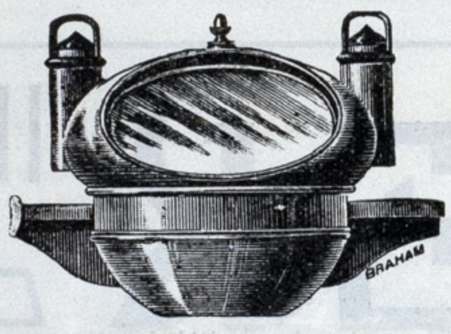

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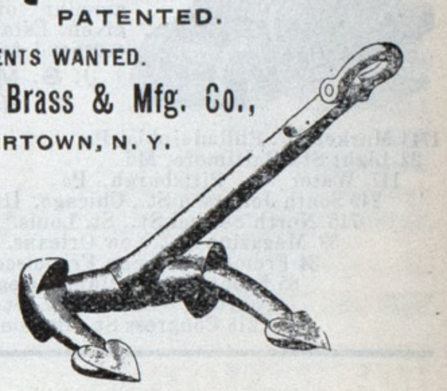

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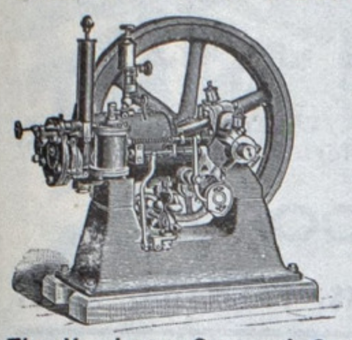

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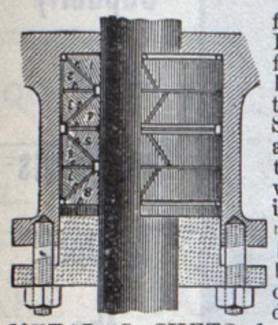

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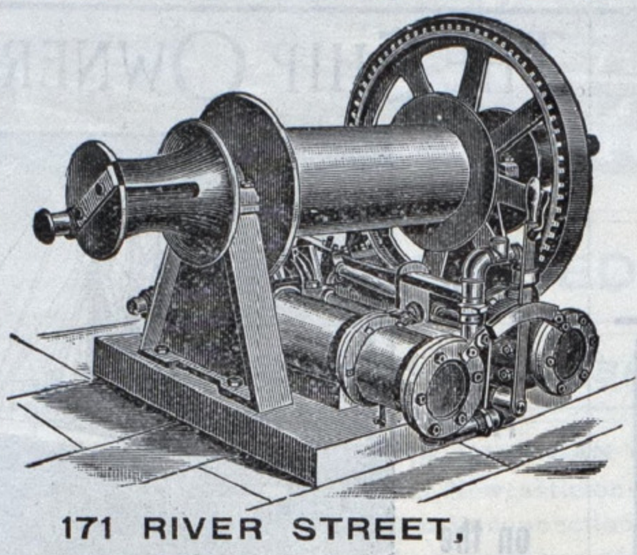

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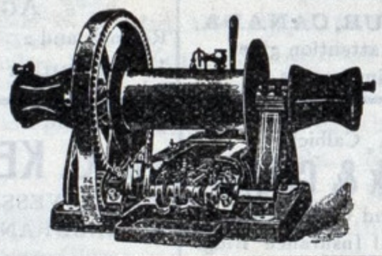

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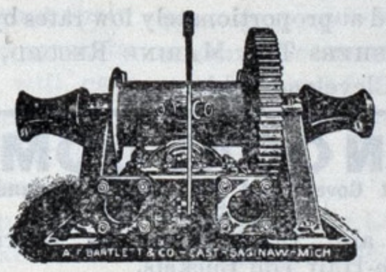

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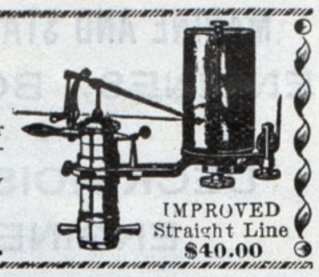

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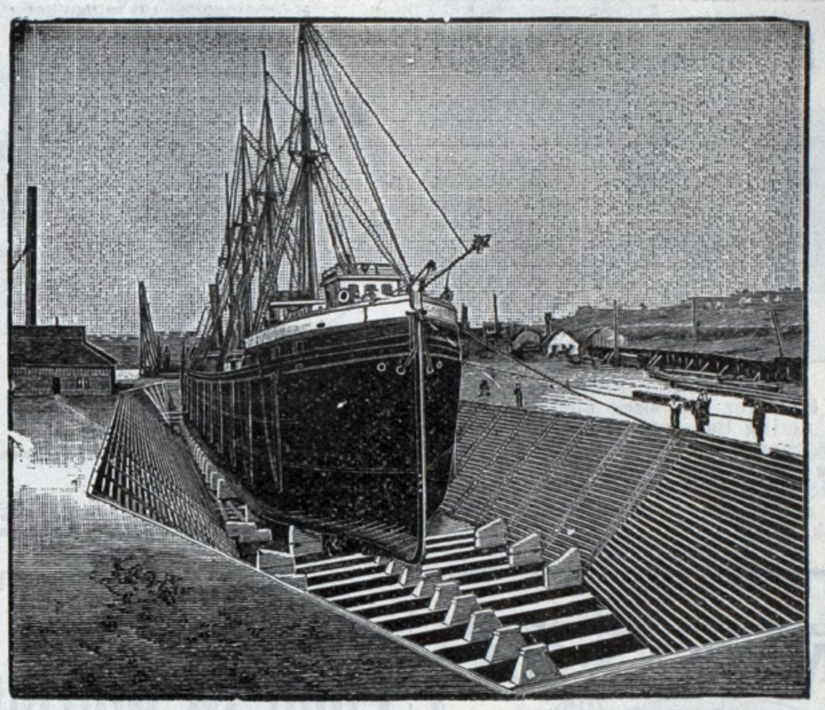

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